DIRECTOR'S REPORT
TO THE
NATIONAL ADVISORY DENTAL AND CRANIOFACIAL RESEARCH COUNCIL

February 2003

ACTIVITIES OF THE NIDCR DIRECTOR

Over the past few months, NIDCR Director Lawrence Tabak has continued meeting with dental schools and organizations to promote collaborative research efforts and to discuss future directions in dental, oral, and craniofacial research. He spoke about "Oral Health in the Post-Genomic Era" at the University of Mississippi Medical Center, the Baylor College of Dentistry, and the University of Maryland at Baltimore. In February he will be the keynote speaker at the University of Michigan's School of Dentistry Annual Research Table Clinic Day. He also discussed "Putting Science into Practice—the Critical Role of Dental Schools" at the dedication of new research facilities at NOVA Southeastern University's College of Dental Medicine in Ft. Lauderdale, FL. Dr. Tabak attended Marquette University School of Dentistry's national meeting on Embracing the 21st Century: A Changing Landscape for Dental Faculty and Curriculum, where he gave a talk entitled "The Post Genomic Era Enters the Mouth: the Impact on the Dental Faculty Member of the Future." In addition, Dr. Tabak addressed NIDCR research directions and funding priorities when he met with the faculty and students of the University of Medicine and Dentistry of New Jersey in January, and he attended the meeting of the ADA Council on Scientific Affairs in Chicago. He also will give the plenary talk entitled "The Sweet Side of Salivary Function" at the Gordon Research Conference in Ventura, CA in February.

ACTIVITIES OF THE NIDCR DEPUTY DIRECTOR

In her capacity as NIDCR Deputy Director, Dr. Dushanka Kleinman made presentations at the American Dental Association on women's health research; the Hispanic Dental Association on oral health disparities and related national activities; the American Public Health Association on the follow-up of the Surgeon General's report; the Clinical Preventive Dentistry Leadership meeting on the current status of initiatives affecting the teaching of preventive dentistry; and on adolescent oral health at a workshop on that topic.

As the Chief Dental Officer, USPHS, Dr. Kleinman met with Chief Dental Officers from other countries at the Federation Dentaire Internationale annual meeting. She also attended the American Dental Education Association Deans Meeting as the PHS member of the Council of Deans, and served as a District IV PHS Delegate to the American Dental Association House of Delegates. This year, Dr.

Isabel Garcia served as the PHS Alternate Delegate. Dr. Kleinman also has briefed Surgeon General Richard Carmona on national issues facing dentistry and oral health, and co-hosted his first town meeting at the NIH.

BUDGET UPDATE

(*Please see attachment)*

FY 2002

NIDCR's final appropriation, including the effect of an across-the-board reduction to the Labor/HHS/Education appropriation and a reduction for the DHHS Secretary's use of transfer authority, was $342.3 million.

Funding for research project grants was $195.6 million in support of 615 awards. The Centers program was funded at a level of $22.9 million, which supported 12 center awards. Additionally, 94 Research Career Development Award (RCDA) positions and 273 full-time training positions were supported.

FY 2003

Amended President's Request

As amended, the FY 2003 President's budget request for the NIDCR is $369.8 million, including AIDS, which is an increase of $27.5 million--or 8 percent--over the FY 2002 level. The FY 2003 amended budget request for the NIH is $27.2 billion, an increase of $3.9 billion--or 16.8 percent--over the FY 2003 estimate.

House and Senate Action

The House allocation was $360.5 million, which represents a 5.3 percent increase over FY 2002, and the Senate allocation was $374 million--an increase of 9.3 percent.

Continuing Resolution

To date, NIH and many Federal agencies have operated under a series of continuing resolutions. Therefore, NIDCR has established restrictive funding policies to contain spending at last year's budget level.

DHHS/NIH/NIDCR ACTIVITIES

DHHS ACTIVITIES:

National Oral Health Call to Action

The development of the National Oral Health Call to Action is well underway. The draft document was reviewed by the Ad Hoc Working Group for the National Oral Health Call to Action, the Partnership Network, and the PHS Oral Health Coordinating Committee, and was presented to the Deputy Surgeon General, USPHS. It is now ready for formal review by the Surgeon General, Assistant Secretary for Health, and the general Departmental review process. The Call to

Action, a partnership between the public and private sectors, is a follow-up to *Oral Health in America: A Report of the Surgeon General*. Its release is anticipated in the spring of 2003.

HHS Charters Advisory Council for Genetics, Health, and Society

A new committee with significantly broader scope has replaced the HHS Secretary's Advisory Committee on Genetic Testing (SACGT). The Secretary's Advisory Committee on Genetics, Health, and Society (SACGHS) was chartered September 23 and announced October 23. SACGHS will examine human genetic technology development and expand its scope beyond the genetic testing focus of SACGT. Specifically, the charter states SACGHS will address "complex and sensitive medical, ethical, legal and social issues raised by new technological developments in human genetics." The committee will make recommendations on human health and societal issues raised by the development and use, as well as potential misuse, of genetic technologies.

NIH ACTIVITIES:

Extramural Loan Repayment Expands to Non-NIH Grantees

NIH extramural loan repayment programs (LRPs) for clinical and pediatric research will double in funding in FY 03 as the applicant pool is no longer restricted to NIH grantees. The clinical research LRP will receive $40.8 million in two-year total contract costs for 790 awards, up from the FY 02 level of $20 million for 393 awards. The pediatric LRP will be provided $16 million for 340 awards in FY 03, compared to the FY 02 level of $8 million for 168 awards. A substantial increase in applicants is expected now that the programs have been expanded to researchers from non-profit institutions, foundations, and professional societies as well as federal, state, and local government agencies.

NIH Biosafety Facility Groundbreaking Slated for November 2003

NIH anticipates groundbreaking for its planned biosafety level II/III laboratory in November 2003 and completion of construction two years later. The facility will house research on potential bioterror agents, including anthrax, tularemia, and poxviruses, as well as other infectious diseases such as tuberculosis, respiratory viral pathogens, enteric pathogens, and vector-borne flaviviruses. Researchers at the new facility also will focus on bacterial vaccines and infectious disease immunology. The new building will be located on the NIH campus near Building 31 and will house 200 workers.

NIH Deputy Director To Change Roles

NIH Deputy Director Dr. Ruth Kirschstein is transitioning to the role of senior advisor to NIH Director Elias Zerhouni, Kirschstein and Zerhouni announced to NIH institute and center directors on September 26. With the exception of a short stint with the Food and Drug Administration, Kirschstein has been with NIH since 1956, serving as Deputy Director from November 1993 until December 1999 and again since the appointment of Dr. Zerhouni in May. She has served two tours as Acting Director: once between the departure of Dr. Bernadine

Healey and the appointment of Dr. Harold Varmus, and again when Varmus left, filling a void that extended over parts of the Clinton and Bush administrations. During that time, she presided over the agency in the midst of an important five-year budget doubling period.

Florence Mahoney Dies

Florence Mahoney, one of the first champions of the National Institutes of Health and Federal funding for biomedical research, died at her home in Washington, D.C. on November 29. She was 103 years old. Married to Daniel Mahoney, publisher of influential newspapers in New York, Mrs. Mahoney parlayed this journalism connection into a role in Washington, D.C.'s power structure. She was a presence in Washington political circles from the time of President Truman and lobbied in the White House, before congressional committees, and in her own home at her legendary dinner parties for government-sponsored health care, health insurance, and medical research. She convinced congressional budgeters that funding health research could actually save lives and she built a network of contacts that included politicians, doctors, and research scientists. She and her colleague, Mary Woodard Lasker, who died in 1994, were early advocates of research on mental illness, heart disease, and Alzheimer's disease, and were among the first to foresee the health concerns that would accompany the country's increasing older population. In the 1960s, Mahoney began to push for a separate institute on aging at the NIH. Although President Nixon vetoed the bill to establish the new institute, Mahoney's many friends in Congress overrode the veto with a two-thirds majority. The philanthropic alliance between Mahoney and Lasker helped NIH become a world-class medical research institution.

NIDCR ACTIVITIES:

NIDCR Convenes Special Expert Panels

Based on the recommendations of the NIDCR Scientific Opportunities Work Group, NIDCR has convened panels of experts to help identify and catalogue areas of scientific opportunity for the period 2004-2009 within the three major topics identified by the working group. A panel on the Genomics and Proteomics of Dental, Oral and Craniofacial Diseases was convened on May 22, and one on the Repair and Regeneration of Dental, Oral and Craniofacial Tissues was held September 5. The reports of these panels are posted on the NIDCR web site under "Long Range Research Opportunities" at http://www.nidr.nih.gov/research/long_range_research_opps.asp
A third panel on Clinical Approaches to Diagnosis, Treatment and Prevention of Dental, Oral and Craniofacial Diseases took place on November 14. The report will be available in the near future.

In addition, NIDCR convened expert panels on Training (held June 7) and on Long-Term Opportunities in AIDS Research (held December 10). A report from the former is also posted on the NIDCR web page. The report of the AIDS panel will be available early in 2003.

Development of FY 2005 Research Initiatives

NIDCR has begun the process of developing its FY 2005 scientific initiatives and is seeking input and advice from the extramural and intramural communities, industry, and the public. The proposed NIDCR FY 2005 research initiatives include novel clinical trials for oral and craniofacial diseases and conditions; identifying and validating surrogate markers for clinical progression of chronic and disabling oral diseases; novel research to evaluate the behavioral and biological determinants of oral and craniofacial diseases in vulnerable populations; human stem cell and bioengineering approaches for the repair/regeneration of orofacial structures; and AIDS/HIV: future opportunities and initiatives for NIDCR AIDS research. Staff members are serving as team leaders on several of the proposed initiatives.

NIDCR Director Testifies in Amalgam Hearing on Capitol Hill

On November 14, Representative Dan Burton (R-IN), former Chair of the House Committee on Government Reform, convened a hearing to discuss the ongoing scientific research related to dental amalgam. Mr. Burton, along with Ms. Diane Watson (D-CA) and others, believe that mercury may leach from fillings and cause brain disorders such as autism. Mr. Burton has held several hearings in the recent past on the use of mercury in vaccines and the autism epidemic. Watson and Burton also co-sponsored legislation last spring to ban amalgam fillings by 2007, which consequently led to this hearing on "Mercury in Dental Amalgams: An Examination of the Science." NIDCR Director Lawrence Tabak testified on behalf of the NIH and the NIDCR. In addition to the Chairman and Ms. Watson, committee members present for the hearing included: Representatives Eleanor Holmes Norton (D-DC); Benjamin Gilman (R-NY); and C.L. "Butch" Otter (R-ID). Also present were three guest dentist congressmen: Representatives Charlie Norwood (R-GA); John Linder (R-GA); and Mike Simpson (R-ID).

The first panel to testify consisted of representatives from the American Dental Association (ADA), the National Dental Association (NDA), and the Mercury Policy Project, along with three anti-amalgam dentists and scientists. The ADA argued that mercury in fillings is a different form of the metal that is safe to use, and that amalgam fillings are the best option for certain cavities. The anti-amalgamists presented their belief that mercury in dental fillings causes various brain disorders and should be banned.

Government representatives on the second panel included Dr. David Feigel, Director, Center for Devices and Radiological Health, Food and Drug Administration, and Dr. Tabak. Dr. Tabak discussed the two clinical trials funded by the NIH that are comparing the health of more than a thousand children exposed to elemental mercury in dental amalgams. He noted that to date there were no harmful effects attributable to amalgam in either trial, but more conclusive evidence would come in the year 2006 when the studies end. Dr. Feigel explained why amalgam is regulated as a Class II device. Most of the

questions in the second panel were directed at Dr. Feigel and concerned the FDA's classification and regulation of amalgam.

Centralization of NIDCR Training and Career Development Activities
Dr. Kleinman and Dr. Tabak have been working with Dr. Jim Lipton, Dr. Sharon Gordon, and Ms. Lorrayne Jackson to centralize to the Office of the Director, NIDCR the activities for training, career development, dental school infrastructure, and outreach and recruitment. With this move, Dr. Gordon will oversee both intramural and extramural training and career development activities. Dr. Lipton will direct the dental school infrastructure and curriculum development program, and Ms. Jackson will lead extramural recruitment and outreach activities.

SCIENTIFIC ADVANCES

Scientists Decipher Genome Sequence of *S. Mutans*
Scientists have deciphered the complete genome sequence of *Streptococcus mutans*, the main organism implicated in causing tooth decay. The work was carried out by researchers at the University of Oklahoma and was supported by the NIDCR. The paper describing their work was published in the *Proceedings of the National Academy of Sciences*. With the *S. mutans* sequence now available, the scientists say it will be possible to identify genes that might be potential targets for new therapies. This tool will enable researchers to identify genes involved in acid tolerance, biofilm formation and communication as well as other genes important in the functioning of *S. mutans*. The sequence data for *S. mutans* is available at http://www.genome.ou.edu/smutans.html and http://www.oralgen.lanl.gov/ or through GenBank (accession number AEO14133).

Scientists Turn Early Fat Cells into Bone Cells in the Laboratory
NIDCR-supported scientists reported in the *Journal of Cell Biology* that they have succeeded in inducing early, or pre-fat cells to become fully developed bone cells. They accomplished this by applying two natural compounds externally to these cells, a straightforward approach that is far less laborious than manipulating genes in the cells. One compound they used was bone morphogenetic proteins, or BMPs, originally identified for their ability to promote bone or cartilage formation. The other was retinoic acid, a derivative of vitamin A, which is known to inhibit fat cell differentiation while also promoting bone growth. The scientists note that with further research and refinement, turning pre-fat cells into bone cells could have important implications in promoting bone regeneration after surgery or thickening brittle bones. Drs. Jeremy Skillington, Lisa Choy, and Rik Derynck at the University of California at San Francisco conducted the research.

Scientists Identify Key Gene Involved in Cleft Lip and Palate

Scientists reported in *Nature Genetics* that they have discovered the gene that causes Van der Woude syndrome, the most common of the syndromic forms of cleft lip and palate. The term "syndromic" means babies are born with cleft lip and palate, in addition to other birth defects. Because the cleft lip and palate seen in people with Van der Woude syndrome closely resembles the non-syndromic condition, scientists long have been intrigued with identifying the gene. The hope was the gene would permit genetic testing of affected families and might point to the complex cascade of molecular signals during early gestation that prompts the formation of the lips and palate, critical information in developing viable strategies to prevent clefts. NIDCR grantee Dr. Jeff Murray, a scientist at the University of Iowa and author on the paper, noted that the gene, called IRF6, seems to play a key role in the normal formation of the lips, palate, skin, and genitalia. He said further study of the gene should provide precise molecular clues into normal human development and suggest specific biological strategies to prevent birth defects, such as cleft lip and palate.

Microsatellite Analysis Predicts Development of Second Oral Malignancies At Former Cancer Sites

NIDCR-supported investigators reporting in *Cancer Research* describe for the first time the use of microsatellite markers to predict the development of second oral malignancy (SOM) in oral cancer sites. Approximately one-third of patients with a history of oral cancer will have a recurrence of their tumor or develop a second primary despite intensive follow-up. The surgery and/or radiation therapy used to treat oral cancers often induces reactive white and red lesions at the previous cancer site. Although some of these lesions may appear histologically benign (displaying only hyperplasia or mild dysplasia), and clinicians may consider them to be of low risk and not in need of further treatment, the investigators determined that a substantial number of these lesions actually progress to SOM. The researchers evaluated 68 oral lesions (leukoplakia) found at former cancer sites for loss of herterozygosity at 19 loci on seven chromosome arms. They found that 3p and/or 9p loss in post-treatment leukoplakia was associated with a 27-fold increase in developing SOM. In fact, 60 percent of cases with loss of heterozygosity developed SOM in two years. Furthermore, approximately 47 percent of the leukoplakias that displayed an absence of dysplasia, or that had minimal dysplasia, progressed into SOM, suggesting that morphologically low risk lesions are indeed at higher risk for malignant progression. Data from the study show that identification of 3p and 9p loss in post-treatment lesions could serve as a simple and direct test for predicting risk of SOM, thereby aiding in clinical management. Drs. MP Rosin, WL Lam, C Poh, ND Le, RJ Li, T Zeng, R Priddy, and L Zhang at the British Columbia Cancer Research Centre, Simon Fraser University, and the University of British Columbia conducted the research.

Scientists Conduct Molecular Analysis of Bacterial Species Associated with Childhood Caries

Although substantial epidemiologic evidence links *Streptococcus mutans* to caries, the pathobiology of caries may involve more complex communities of bacterial species. Using molecular identification methods, NIDCR-supported scientists at Ohio State University, The Forsyth Institute, and the Harvard School of Dental Medicine compared the bacteria found in children with early childhood caries (ECC) to those found in caries-free children. Cloning and sequencing of bacterial 16S ribosomal DNAs from a healthy subject and a subject with ECC were used for identification of novel species or uncultivated phylotypes and species not previously associated with dental caries. Ten novel phylotypes were found and a number of species or phylotypes that may play a role in health or disease were identified, warranting further investigation. Significant differences were observed for nine species: *S. sanguinis* was associated with health and, in order of decreasing cell numbers, *Actinomyces gerencseriae*, *Bifidobacterium*, *S. mutans*, *Veillonella*, *S. salivarius*, *S. constellatus*, *S. parasanguinis*, and *Lactobacillus fermentum* were associated with caries. These data suggest that *A. gerencseriae* and other *Actinomyces* species may play an important role in caries initiation and that a novel *Bifidobacterium* may be a major pathogen in deep caries. Further investigation could lead to the identification of targets for biological interventions in the caries process and contribute to improved prevention of and treatment for this significant public health problem. The research appeared in the *Journal of Clinical Microbiology* and was conducted by Drs. MR Becker, BJ Paster, EJ Leys, ML Moeschberger, SG Kenyon, JL Galvin, SK Boches, FE Dewhirst, and AL Griffen.

Dental Care Combined With Dietary Supplementation May Prevent Oral Bone Loss in Postmenopausal Women

Osteoporosis is considered to be a risk factor for tooth loss and edentulism in the elderly. There also is evidence that estrogen deficiency leads to bone demineralization and oral bone loss. NIDCR-supported scientists conducted a three-year study of 135 postmenopausal women (with no evidence of moderate or severe periodontal disease) to determine whether the positive effects of hormone/estrogen replacement therapy (H/ERT) on post-cranial bone density are accompanied by similar positive effects on oral bone mass. The women received either daily oral conjugated estrogen (Premarin) alone; estrogen in combination with medroxyprogesterone acetate (Prempro); or placebo. All participants also received calcium carbonate and cholecalciferol (vitamin D3) supplements and a yearly dental cleaning. At the end of the study, the investigators assessed changes in alveolar crest height (using bite-wing radiographs) and alveolar bone density (using digital-subtraction radiography). Post-cranial bone density was measured in the lumbar spine and left femur by means of dual-energy x-ray absorptiometry. Results from the study indicate that H/ERT significantly increased alveolar bone mass compared with placebo. However, an important and surprising finding is that the placebo group who received only calcium and cholecalciferol supplements and a yearly dental cleaning experienced a

statistically significant increase in alveolar bone density and a slight improvement in alveolar crest height. The investigators contend that dental care and dietary supplementation with calcium and cholecalciferol may be sufficient to prevent postmenopausal oral bone loss.

The research appeared in *The Archives of Internal Medicine* and was conducted by Drs. Roberto Civitelli, Thomas K. Pilgram, Mary Dotson, Jane Muckerman, Nancy Lewandowski, Reina Armamento-Villareal, Naoko Yokoyama-Crothers, E. Eugenia Kardaris, Jay Hauser; Sheldon Cohen, and Charles F. Hildebolt at Washington University School of Medicine and Barnes-Jewish Hospital, St. Louis, MO.

Periodontal Pathogens Detected in Young Children

Although few studies in the past have detected periodontal pathogens in young children, NIDCR-supported researchers conducting an epidemiological study found that 71 percent of the children in their study were infected with at least one periodontal pathogen. The study also looked at the relationship between the occurrence of periodontitis in the youngsters' mothers and the detection of periodontal pathogens in the children. Children (18-48 months) were randomly selected from the immunization registry on the island of Saipan, Commonwealth of the Northern Mariana Islands (CNMI), USA. Plaque samples from the tongue and gingival/tooth were harvested and analyzed by DNA probe checkerboard assay for *Porphyromonas gingivalis* and *Bacteroides forsythus*. Clinical measurements included a gingival bleeding score in the children and periodontal screening and recording (PSR) score in their mothers. Periodontal pathogen detection rates in the children were 69 percent for *P. gingivalis* and 29 percent for *B. forsythus*. Mothers who had one or more periodontal sites with probing depths > 5.5 mm were classified as having periodontitis. However, when all mother-child pairs were considered, the periodontal status of the mother was not found to be a determinant for detection of periodontal pathogens in the children. A modest level of association was observed, though, between periodontitis in mothers and detection of *B. forsythus* in their daughters.

Drs. E. Y. Yang, A.C.R. Tanner, P. Milgrom, S. A. Mokeem, C.A. Riedy, A.T. Spadafora, R.C. Page, and J. Bruss at the University of Washington, Seattle, WA, The Forsyth Institute, and the Department of Public Health Services, Saipan, conducted the research. Results of the study appeared in *Oral Microbiology Immunology*.

PAX 9 Protein Found to Be Crucial for Normal Tooth Development

NIDCR-supported researchers at the Baylor College of Medicine, the University of Texas Health Science Center at Houston, and the University of North Carolina reported in *Human Genetics* that correct levels of the *PAX9* protein are crucial for tooth development, and that haploinsufficiency for *PAX9* is the basis for hypodontia, the congenital absence of one or more teeth. Hypodontia is one of

the most common inherited anomalies affecting the human dentition. There are both syndromic and non-syndromic forms of hypodontia and it is often inherited as an autosomal dominant trait. The NIDCR-supported researchers identified a family in which 19 members were affected with hypodontia involving the majority of their molar teeth. Blood samples were collected on each of 42 members of this family and DNA was isolated. The sequence of the *PAX9* gene in members of the family was found to contain a mutation in all affected individuals that resulted in a shortened, apparently non-functional PAX9 protein. Since this initial discovery, four other families with hypodontia involving the molar teeth have been studied. Each of these families has a unique mutation in *PAX9*, further confirming the critical role of *PAX9* in human molar development. In one of these families, a deletion that encompassed the entire *PAX9* gene resulted in the absence of both primary and permanent posterior teeth. Drs. P Das, DW Stockton, C Bauer, LG Shaffer, RN D'Souza, JT Wright, and PI Patel conducted the research.

MEETINGS AND WORKSHOPS

Dentistry's Role in Responding to Bioterrorism and Other Catastrophic Events

The first national conference on dentistry's role in bioterrorism and other catastrophic events will be held in Washington, D.C., March 27-28, 2003. The U.S. Public Health Service and the American Dental Association are cosponsoring the conference. The NIDCR and the Centers for Disease Control and Prevention (CDC) are providing support. Five hundred participants are expected, including private practitioners, educators, health department directors, and officers and staff from DHHS, PHS, and the Department of Defense. Among the confirmed speakers are Surgeon General Richard Carmona, NIAID Director Dr. Anthony Fauci, Dr. Michael Alfano, Dean, College of Dentistry, New York University, and Dr. Ed Thompson, Deputy Director for Public Health Services, CDC. They will provide a comprehensive overview of the issues facing the nation and the potential for dentistry's role. The dental category of the PHS is a major contributor under Dr. Bill Kohn's leadership; former NADCRC member Dr. Dianne Rekow, Director of Translational Research at New York University College of Dentistry, is on the planning committee. Online registration is available at http://www.ada.org/prof/events/adaevent/bioterror/index.html

FDI 2003 World Dental Congress

NIDCR Director Lawrence Tabak will present a major session on "Saliva as a Diagnostic Tool" at the FDI 2003 World Dental Congress in Sydney, Australia. Other programs in which NIDCR staff will be involved include the Public Health Section, a proposed session on the legacy of David Barmes for the 21st century, and a session on women in dentistry.

Meeting of Salivary Diagnostics Group

NIDCR recently hosted the first meeting of its grantees who are part of a new program to develop novel technologies using saliva as a diagnostic tool. In his opening remarks, NIDCR Director Dr. Lawrence Tabak emphasized the rich opportunities that saliva provides for non-invasive assessment of a variety of oral and systemic diseases. Technologies developed through this program may one day catalyze a shift in our current health system of disease detection to real time health surveillance.

The meeting provided an opportunity for the grantees to give presentations about their research projects and to meet with Dr. Tabak, Dr. Kleinman, and NIDCR program directors, including Dr. Eleni Kousvelari, chief, Cellular and Molecular Biology, Physiology and Biotechnology Branch, Division of Basic and Translational Sciences, who coordinates the effort on behalf of NIDCR. The seven grantees are: Drs. Eric Anslyn, University of Texas in Austin; Dan Malamud, University of Pennsylvania; Anup Singh, SANDIA CORP-SANDIA National Laboratories; David Stahl, University of Washington; David Walt, Tufts University; David Wong, UCLA; and Paul Yager, University of Washington. The co-principal investigators and representatives from the National Human Genome Research Institute, the National Cancer Institute, and the National Institute of Arthritis and Musculoskeletal and Skin Diseases also attended the meeting. For further detail, please see http://www.nidcr.nih.gov/SalivaryDiagnosticsGroup.asp

FDI 2002 World Dental Congress

NIDCR Deputy Director Dushanka Kleinman and staff from the NIDCR Office of International Health participated in the FDI World Dental Congress, held in Vienna, Austria, September 28-October 5. The FDI Congress included sessions for public health dental officers, planning meetings for the scientific program for the FDI Congresses in Sydney and India, and sessions on oral health promotion, global oral health goals, and women in dentistry. Dr. Lois Cohen, associate director, Office of International Health, gave a presentation on “Women World Leaders: The Case for Oral Health” on October 4. The newly appointed Oral Health Officer, WHO-Geneva, Dr. Poul-Erik Petersen, convened a meeting of the WHO Collaborating Centers to focus on a strategy to integrate oral health initiatives into the existing program structures of the Non-Communicable Diseases cluster of WHO. Redesignation procedures for the collaborating centers also were reviewed; NIDCR’s designation as a WHO Collaborating Center in Oral Health Research has been approved through July 2004.

Barmes Lecture and Friends of the NIDCR Gala

On October 28, the second annual David E. Barmes Global Health Lecture took place on the NIH campus. The videocast is available at: (http://videocast.nih.gov/pastevents.aspf/c-998). Dr. Nevin Scrimshaw, MIT professor emeritus, presented the lecture on “Determinants of Global Health: Nutrition, Immunity, and Infection.” The event, cosponsored by NIDCR and the Fogarty International Center (FIC), marked the beginning of FIC’s 35th

anniversary celebration. Following the Barmes Lecture, the Friends of the NIDCR hosted their 2002 Gala Annual Awards Dinner at the National Press Club. The dinner honored Steny Hoyer (D.-MD), (Lifetime Achievement Award); Mary Woolley, President of Research!America (Public Advocacy Award); Rosie Mestel, medical writer, Los Angeles Times (Media Award); and Mark Mayo, anatomy, physiology and biology teacher, Los Alamitos High School, CA (Slavkin Oral Health Science Education Award). NIDCR Director Lawrence Tabak was a special guest speaker at the Gala.

Global Forum for Health Research

Office of International Health staff participated in the Global Forum for Health Research (GFHR), held November 12-15 in Arusha, Tanzania. This the sixth in a series of annual meetings that focus on correcting what is known as the "10/90 Gap"—the fact that less than 10 percent of global spending on health research is devoted to diseases or conditions that account for 90 percent of the global disease burden. This was the first time during the six years that the forum has been held that oral health research was addressed. OIH led a session on scientific opportunities for international collaborative oral health research. Attendees at the meeting included researchers, research sponsors, and health policymakers.

Dental Organizations Meet to Discuss Global Health Issues

Staff participated in a meeting on September 18 with the Executive Directors of the American Dental Association, the International Association for Dental Research, the American Dental Education Association, and the Regional Advisor for Oral Health, Pan American Health Organization to share information and discuss global health issues that concern these organizations. Subjects that were addressed include the current status of processing F-1 student visas; opportunities for research in India, Pakistan, Japan and the Middle East and opportunities to assist research communities in Argentina and Uruguay; issues expected to surface at the FDI World Dental Congress in Vienna; Disease Control Priorities in Developing Countries—a project of the NIH, Fogarty International Center, World Bank, WHO and the Gates Foundation; and progress in the development of an African Oral Health Education Association (AOHEA).

NIH Retreat on Squamous Cell Carcinoma

NIDCR, together with the National Cancer Institute and the National Institute on Deafness and other Communication Disorders, was one of the sponsors of the NIH Retreat on Squamous Cell Carcinoma, held December 5-6, 2002. The goal of the retreat was to bring together NIH scientists to present their work on squamous cell carcinogenesis in an effort to enhance Institute collaborations. Dr. Yasamin Shirazi, program director of the Epithelial Cell Regulation and Transformation Program, Division of Basic and Translational Sciences, represented the NIDCR at this meeting.

Workshops on Head and Neck Cancer

NIDCR was one of the sponsors of the Sixth Research Workshop on the Biology, Prevention, and Treatment of Head and Neck Cancer, held in McLean, VA on October 9-13. Dr. Shirazi also represented the NIDCR at this meeting.

In addition, NIDCR sponsored a research workshop on Quality of Life Assessment in Head/Neck Cancer Patients, together with the NIH Office of Rare Diseases. The program included reviews of measures used in U.S. and European studies to evaluate the effects of various ablative and organ-sparing therapies on functional outcomes and quality of life in head/neck cancer patients. Preliminary consensus was reached on a core set of measures that could enhance comparison of treatment outcomes across studies. Dr. Patricia Bryant, head of the Behavioral and Social Sciences Research Program, Division of Population and Health Promotion Sciences, participated in the workshop.

Hispanic Dental Association Meeting

At the invitation of the Hispanic Dental Association, Dr. Alice Horowitz, Division of Population and Health Promotion Sciences, organized and moderated a symposium on "Health Communication and Health Literacy—How to Deliver the Message." Dr. Horowitz, Dr. Tom Drury, and Dr. Maria Canto, DPHPS, also gave a presentation on "Oral Cancer Examinations Among Tobacco and Alcohol Users: U.S. 1998."

Other Meetings Attended by NIDCR Staff

American Public Health Association
American Society of Human Genetics
First Dean's Lecture, School of Nursing, University of Pennsylvania, presented by Dr. Lois Cohen
International Conference on Dietary Assessment Methodology
Maryland Cancer Control Meeting
National Conference on Tobacco or Health
National Organization of Tobacco Research Funders
NCI's Tobacco Research Opportunity Retreat
Neuroscience Annual Meeting
Pan-European Federation of the International Association for Dental Research
Science Meets Reality: Recruitment and Retention of Women in Clinical Studies, and the Critical Role of Relevance, sponsored by the Office of Research on Women's Health
Standards Committee on Dental Informatics, American Dental Association
3rd International Conference on Smokeless Tobacco
13th Annual Mark Wilson Conference on research on oral microbiology and immunology

DIVISION OF BASIC AND TRANSLATIONAL SCIENCES

Recently Issued Program Announcements (PAs)

- **Academic Research Enhancement Award (R15)**
  http://grants1.nih.gov/grants/guide/pa-files/PA-03-053.html

- **Research on Microbial Biofilms (PA-03-047)**
  http://grants1.nih.gov/grants/guide/pa-files/PA-03-047.html

- **Nanoscience and Nanotechnology in Biology and Medicine (PAR-03-045)**
  http://grants2.nih.gov/grants/guide/pa-files/PAR-03-045.html

- **Bioengineering Research Partnerships (PAR-03-032)**
  http://grants.nih.gov/grants/guide/pa-files/PAR-03-032.html

Applications Received in Response to Requests for Applications (RFAs)

- **Oral Mucosal Innate Immune Factors in the Inhibition of HIV and Opportunistic Infections (RFA DE-03-002)**

Sixteen applications were received December 11 in response to this RFA, which was released September 13, 2002 in the NIH Guide.
http://grants2.nih.gov/grants/guide/rfa-files/RFA-DE-03-002.html
The RFA encourages investigator-initiated grant applications for support of research on the innate factors of the oral mucosal immune system involved in host resistance to the acquisition and spread of HIV and associated opportunistic infections. An ad hoc study section will review the applications in late winter. Results of the review will be presented to Council in June 2003.

- **Oral Mucosal Vaccination Against HIV Infection and HIV-Related Opportunistic Pathogens (RFA DE-03-003)**

This RFA was released in the NIH Guide on October 3, 2002.
http://grants2.nih.gov/grants/guide/rfa-files/RFA-DE-03-003.html
Substantial advances have been made in understanding the immunology of oral and nasopharyngeal mucosal tissues. To capitalize on this research in the fight against AIDS, NIDCR invited applications to investigate the use of the oral and nasopharyngeal mucosal immune system as a route for vaccination against HIV and associated opportunistic infections. Applications were received on January 14, 2003; an ad hoc study section assembled by the NIDCR Scientific Review Branch will review them in late winter. Results of the review will be presented to Council in June 2003.

- **Restoration of Orofacial Tissues: A Biomimetic/Tissue Engineering Approach (RFA DE-03-004)**

This RFA, issued August 22, 2002, http://grants2.nih.gov/grants/guide/rfa-files/RFA-DE-03-004.html, encourages biomimetics and tissue engineering research for the restoration/regeneration of tooth and periodontal structures; use of tissue engineering and stem/progenitor cell approaches for the construction of an artificial salivary gland and for the repair/regeneration of temporomandibular joint structure; and use of new diagnostic imaging technologies and novel molecular imaging probes to monitor key events during the repair/regeneration of

orofacial tissue and organs. Forty-two applications were received in response to the RFA. The review of these applications is scheduled for March 2003.

- **Pathobiology of Temporomandibular Joint Disorders (RFA DE-03-005)**

The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) and the Office of Research on Women's Health (ORWH) are participating in this RFA, which was issued September 4, 2002. http://grants2.nih.gov/grants/guide/rfa-files/RFA-DE-03-005.html
The purpose of the initiative is to stimulate research aimed at delineating the mechanisms underlying the etiology and pathogenesis of orofacial structures associated with temporomandibular joint disorders (TMJDs). The RFA encourages a systems approach--from the gene, molecule, cell to tissue and organ--that will provide the basis to better understand TMJDs and will lead to the development of new insights into the treatment and management of these disorders. Twenty-two applications were received in response to this RFA. The review of these applications is scheduled for March 2003.

DIVISION OF POPULATION AND HEALTH PROMOTION SCIENCES

Recently Issued Requests for Applications (RFAs) and Requests for Proposals (RFPs)

- **Mind-Body Interactions and Health: Research Infrastructure Program (R24) (RFA OB-03-004)**
  http://grants1.nih.gov/grants/guide/rfa-files/RFA-OB-03-004.html

- **Mind-Body Interactions and Health: Exploratory/Developmental Research Program R21 (RFA OB-03-005)**
  http://grants1.nih.gov/grants/guide/rfa-files/RFA-OB-03-005.html

- **Translational Research in Dental Practice-Based Tobacco Control Interventions (RFA DE-03-007)**
  http://grants1.nih.gov/grants/guide/rfa-files/RFA-DE-03-007.html

- **NIDCR International Patient Registry and Repository for Temporomandibular Muscle and Joint Disorders' (TMJD's) Natural History (NIDCR-BAA-DR-04-06)**
  http://www.nhlbi.nih.gov/funding/inits/dr04-06.htm

Applications Received in Response to Requests for Applications (RFAs)

- **Stigma and Global Health (TW-03-001)**

Four applications relevant to oral health have been received in response to the RFA on Stigma and Global Health, http://grants1.nih.gov/grants/guide/rfa-

files/RFA-TW-03-001.html, which was issued jointly by the Fogarty International Center, the NIDCR, and several NIH Institutes. The applications relevant to NIDCR address stigma associated with craniofacial deformities. Applications for this initiative will be reviewed March 6-7, 2003.

New Clinical Trials Research Program

A major focus of the Clinical, Epidemiology and Behavioral Research Branch, DPHPS, has been the development and introduction of a new clinical trials program focusing primarily on the design and conduct of definitive Phase III clinical trials. This new program introduces an early evaluation by the NIDCR of the programmatic relevance of a proposed clinical trial. A new Clinical Trial Planning Grant provides for early peer review of the proposed trial in terms of rationale, importance of hypothesis, general design features, organizational structure, and implementation plans. This grant also provides support to assist in organizing the components of the trial, in developing a Manual of Operations, and in prospectively documenting recruitment potential. A new Clinical Pilot Data Grant will provide a mechanism for the collection of preliminary data that is necessary to support the development of a definitive Phase III clinical trial. This grant is not intended to support small pilot clinical trials. The complete program was introduced on the NIDCR web site on December 9, 2002, and may be viewed at http://www.nidcr.nih.gov/clinicalTrials/Clinical_Trials_Program.asp

Data Safety and Monitoring Board Guidelines

The NIDCR has revised its guidelines for Data Safety and Monitoring Boards (DSMBs), and these guidelines have been posted on the Institute web site at: http://www.nidr.nih.gov/clinicalTrials/data_Safety_Guidelines.asp
Copies of the revised guidelines have been sent to members of existing DSMBs. It is the goal of the Clinical Trials Program that all trials have appropriate Institute-approved plans for monitoring the safety of participants and data integrity. Efforts to ensure compliance with NIH guidelines on oversight of monitoring of data and safety for existing and new clinical trials are continuing.

Staff attended the following DSMB meetings:

- Prevention of Transmission of *Mutans Streptococci* from Mother to Child; PI: Walter Bretz
- Clinical Investigation of Mandibular Implant Overdenture; PI: David Burns
- Effects of Periodontal Therapy on Pre-term Birth; PI: Bryan Michalowicz
- Effects of Bisphosphonates on Periodontal Disease; PI: Nancy Lane (trial stopped)
- Health Effects of Dental Amalgams in Children; PI: Sonja McKinlay and Casa Pia Study of Dental Amalgams in Children; PI: Timothy DeRouen
- Sensory Retraining Following Orthognathic Surgery, University of North Carolina
- Early Childhood Caries: Prevention and Treatment Outcomes; PI: Dr. Jane Weintraub, University of California at San Francisco
- Prevention Management Model for Early Childhood Caries; PI: Dr. Francisco Ramos-Gomez, University of California at San Francisco

Data Resource Center Web Site Now Available

The Dental, Oral and Craniofacial Data Resource Center (DRC), co-sponsored by the NIDCR and the Division of Oral Health, Centers for Disease Control and Prevention (CDC), launched its new web site at http://drc.nidcr.nih.gov The web site serves as a resource on dental, oral and craniofacial data for the oral health research community, clinical practitioners, public health planners and policy makers, health advocates, and the general public. The web site features: 1) *Oral Health U.S., 2002*, an annual report of oral health statistics summarizing the oral health status of the U.S. population, also available on CD-ROM; 2) a statistical Data Query System, which is an on-line interactive data analysis tool that makes national oral health data readily available; and 3) the Catalog of Surveys and Archive of Procedures Related to Oral Health, a searchable database containing information on over 250 private, state, federal, and international surveys and data sets, also available on CD-Rom.

National Fluoride Database and Intake Assessment Study

Progress continues on this collaborative project to integrate a software-based system for assessing dietary and non-dietary sources of fluoride intake in individuals and a national database of nutrient values for foods and beverages, including fluoride. The study will include an estimate of fluoride concentrations and their variability in a national sample of commercial drinking waters, beverages, and foods.

DIVISION OF INTRAMURAL RESEARCH

DIR Holds Retreat

On October 31, DIR principal investigators, tenure-track scientists, staff scientists and clinicians, administrative staff and NIDCR Director Lawrence Tabak participated in a two-day retreat held in Saint Michaels, MD. Discussions highlighted ongoing research and potential areas of future research. Tenure-track investigators, staff scientists, and core directors presented brief reports on their current work. The venue also provided an opportunity for Dr. Tabak and the investigators to discuss the Director's goals for the intramural and extramural programs, including a special emphasis on clinical research and budget expectations for FY 2003, 2004, and 2005.

Ongoing Renovations

The renovations to DIR laboratories continue in spite of inclement weather conditions. The three-level tower is complete and the third floor laboratory is being fitted with casement work and equipment. Concrete work for the three levels below ground is near completion and equipment to be housed in these areas will be installed later this winter. This equipment includes a new emergency generator, power generators, and an autonomous air handling

system. The vivarium construction is on schedule and should be completed by spring; the animals will move into the new quarters by June.

INTERNATIONAL ACTIVITIES

WHO Report on Craniofacial Anomalies

The World Health Organization has published a report entitled "Global Strategies to Reduce the Health Care Burden of Craniofacial Anomalies." The report is a product of the ongoing NIDCR-WHO project to help support international collaborative research in craniofacial anomalies and is based on meetings held in Geneva in November 2000 and in Park City, Utah in May 2001. The publication covers genetics, gene-environment interactions, treatment, and prevention and includes priorities and recommendations for research in the field of craniofacial birth defects. The report may be viewed on the NIDCR web site at *http://www.nidr.nih.gov/research/international/CraniofacialAnomalies/index.asp*

Proposed U.S.-Israel Bilateral Symposium on Women's Health

OIH staff members have been in discussions with representatives of the Ministry of Health, Israel and with staff from the Fogarty International Center and the NIH Office of Research on Women's Health regarding a proposed U.S.-Israel Bilateral Symposium on Women's Health. There is interest in convening such an event in Israel during 2003 and including oral health in the program agenda.

Development of Israeli Medical Research Council

Representatives from Israel's Ministry of Health, including the chief scientist, Dr. Rami Rahamimoff (Hadassah School of Medicine), and the former chief scientist, Dr. Bracha Rager (Ben Gurion Medical School), visited the NIH campus in September to discuss plans for the development of an Israeli Medical Research Council. Because the proposed Medical Research Council would include a component to support dental research, their visit included a meeting with the NIDCR Director and staff from OIH. Topics of mutual interest and potential collaboration include training clinical dental researchers and strengthening the capacity to conduct research.

National Oral Health Information Clearinghouse Activities

Patient Advocates Forum

Plans are under way for the 4th annual NIDCR Patient Advocates Forum. The 2003 meeting will be held on Monday, May 5, in the Building 30 conference room on the NIH campus.

NOHIC Coordinating Panel

Preparations are also under way for the annual NOHIC Coordinating Panel meeting, which will be held on Tuesday, July 22, in Bethesda.

DIVERSITY AND EEO ACTIVITIES

Affirmative Action Plan (AAP) Update

Four AAP goals were established for FY 2002: to hire a Native American or African American in the science professional category; to hire a Native American or African American in the administrative professional category; and to hire two Native Americans or white women in the associates/fellows category. NIDCR achieved the latter three of its four AAP goals for FY 2002 and eliminated the severe underrepresentation of African Americans in the administrative professional employment category.

A Native American was successfully recruited as a post-baccalaureate IRTA. Four Hispanics and three African Americans were supported under the Division of Intramural Research Diversity Initiative in FY 2002.

Recruitment and Education Outreach

The NIDCR Office of Diversity Management staff coordinated a trans-NIH workshop on "How to Successfully Bridge from a Community College to a Scientific Research Career in Health Sciences." The workshop, which included a step-by-step review of the application process for NIH Summer Internship Programs, was held during the 2002 24th Annual American Indian Science and Engineering Society (AISES) Conference in Tulsa, OK. Staff will provide information about employment opportunities to 13 contacts made at the workshop.

NIDCR continued its support of NIH pipeline initiatives by sponsoring a student attending the National Native American Youth Initiative and two students who will attend the National Hispanic Youth Initiative (NHYI) 2003 Summer Programs.

NIDCR Office of Diversity Management staff participated in the trans-NIH "Health for All" outreach and recruitment program at the National Black Family Reunion, held September 7-8, 2002. NIDCR partnered with Howard University Dental School students and dentists from the Robert T. Freeman Chapter of the National Dental Society to conduct oral cancer screenings for 267 individuals; 84 percent were African American, 7 percent Hispanic, 2 percent Asian, and 1 percent individuals with disabilities.

The NIDCR diversity program manager staffed an exhibit at the annual Society for Advancement of Chicanos and Native Americans (SACNAS) and Hispanic Association of Colleges and Universities (HACU) conferences held in October 2002 and recruited for employment and training opportunities. Thirty-seven contacts were made at the conference; these individuals will receive follow-up information about employment opportunities.

Workplace Diversity Initiative

Dr. Tabak gave a presentation on health disparities in the Hispanic communities at the NIH Hispanic Heritage Month observance, held on September 19.

Work continues on the development of an NIH-wide interactive training module on diversity. The module should be released this spring.

The NIDCR diversity program manager was selected to serve as a recruiter for the Federal Workforce Recruitment Program (WRP) and to interview students with disabilities for inclusion in the WRP 2003 database. Managers will be encouraged to access the database prior to advertising for vacancies and when seeking student interns for appointments.

PERSONNEL

- On September 22, Dr. Richard L. Mowery joined the NIDCR as Chief, Clinical Epidemiology and Behavioral Research Branch, Division of Population and Health Promotion Sciences (DPHPS). Dr. Mowery has extensive work experience in clinical trials design and clinical trials management and in implementing a national program related to health sciences. He has been a leader at NIH in addressing NIH policies and guidelines on such topics as data monitoring, safety, and analysis of clinical trials. Dr. Mowery has been with NIH since 1981. Previously he was with the National Eye Institute where his accomplishments include the development of the first NIH intramural program data and safety monitoring committee to oversee intramural interventional studies.

- On February 1, Dr. Robert H. Selwitz assumed the role of Chief, Health Policy, Analysis and Development Branch, Division of Population and Health Promotion Sciences (DPHPS). Dr. Selwitz has worked at the NIDCR since August 1988 in a variety of capacities in the former Division of Epidemiology and Oral Disease Prevention, the Office of Science Policy and Analysis, and DPHPS. Over the past year, he has provided leadership on behalf of the Institute in several key global initiatives related to the detection of dental caries in epidemiological surveys and clinical trials. In addition, he serves as director of the NIDCR Dental Public Health Residency Program.

The Grants Management Branch, Division of Extramural Activities has welcomed several new staff members to its organization over the past three months:

- Ms. Mary Daley was selected as the NIDCR grants management officer in October 2002. Prior to her arrival at NIDCR, she served as a lead grants management specialist in the National Institute of Child Health and Human Development where she managed a team with responsibility for the business management function of a variety of grant mechanisms. Ms. Daley has had a long Federal career in the grants area.

- Mr. Christopher Myers recently joined the branch as the lead grants management specialist. He held a similar position at the National Institute of Child Health and Human Development for the past two years. Mr. Myers has an extensive grants management background and is well versed in computers as they relate to electronic communications to the extramural community.

- Ms. Diana Rutberg, a grants management specialist, joined the branch at the end of January. Ms. Rutberg was formerly with the National Institute of Child Health and Human Development. Prior to joining the Federal sector, she was a senior project manager with the Marriott Corporation.

- Dr. Jaya Satish was recently appointed as a health scientist administrator in the Cellular and Molecular Biology, Physiology, and Biotechnology Branch, Division of Basic and Translational Sciences. Dr. Satish will serve as director of the Small Business Innovative Research/Small Technology Transfer Programs and also as the expert on technology transfer issues. Dr. Satish has extensive experience in small business development and program administration in a healthcare hospital setting. She earned her Ph.D. in genetics from the University of Madras, India.

- The search for the NIDCR Clinical Director concluded in January. The search committee members will meet to discuss the candidates and then forward their recommendation to the Scientific Director as soon as possible.